April 2004

NASA's Research Partnership Centers

Partnering with industry to explore space and improve life

NASA's Research Partnership Centers represent an extensive network of industry, government and academic partners to benefit space exploration and life on Earth. This network includes small businesses, as well as many of the largest research and development companies in the world. Research Partnership Centers offer industry links with space research expertise, collaboration with other companies, access to space and NASA facilities, and opportunities to develop new businesses and products.

Located at universities or non-profit institutions throughout the country, each of the 12 Research Partnership Centers focuses on a specific discipline, such as spacecraft technology, satellite communication, space power, biotechnology and advanced materials. The centers' partners perform research using NASA ground and space facilities including the Space Shuttle or International Space Station.

Long-term human space travel for future moon and Mars exploration requires research to ensure human health and safety. Industry has the marketplace expertise and knowledge to conduct research and create technologies for space and Earth applications. Through their work with Research Partnership Centers, industries have developed technologies such as a new star tracker that determines attitude as well as star patterns; and a hyperspectral imaging system that can detect forensic materials and identifies molds and toxins in food supply. Pharmaceutical companies conduct research with the centers to develop new drugs for the treatment of health problems encountered in space and on the ground.

Research Partnership Centers welcome new industry partners. For more information, contact the Space Partnership Development Office (contact information on the next page) or a Research Partnership Center directly. The following items provide a brief description of each center's research and contact information.

BioServe Space Technologies (BioServe)

University of Colorado – Boulder

Research: Osteoprotegerin for bone loss prevention, animal habitat control for space flight, plant lignin biosynthesis and cell wall biogenesis, and bioreactor system design.

(303) 492-4010

http://www.colorado.edu/engineering/BioServe

Center for Commercial Applications of Combustion in Space (CCACS)

Colorado School of Mines

Research: Water mist fire suppression, combustion synthesis of advanced porous materials, fire suppression in spacecraft, propellant from space resources, and a robotic excavator.

(303) 384-2096

http://www.mines.edu/research/ccacs

Center for Advanced Microgravity Materials Processing (CAMMP)

Northeastern University

Research: Ethylene biosensor development, zeolites and carbon nanotubes for hydrogen storage, and smart materials for sensor applications and detection.

(617) 373-7912

http://www.dac.neu.edu/cammp

Center for Satellite and Hybrid Communication Networks (CSHCN)

University of Maryland

Research: Swarm robotics for space missions and exploration, wireless networks with mobile autonomous components; and hybrid communication networks for mission communications, sensor networks, telemedicine and satellite constellations.

(301) 405-7900

http://www.isr.umd.edu/CSHCN

Center for Biophysical Sciences and Engineering (CBSE)

University of Alabama – Birmingham

Research: Development of real time bioreactor systems for bone loss research, DNA damage repair due to radiation and immune system changes; development of pathogen detection systems for air, water and food supplies; robotics; and thermal control freezer systems.

(205) 934-5329

http://www.cbse.uab.edu

Center for Space Power (CSP)

Texas A&M University

Research: Magnetic bearing technology for advanced, high-speed gyros and flywheels to store energy or provide navigational control, multi-quantum well solar cells for mass reductions, phase separator for life support, and wireless power transmission.

(979) 845-8768

http://engineer.tamu.edu/tees/csp

Center for Space Power and Advanced Electronics (CSPAE)

Auburn University

Research: High-efficiency electric thruster system, flywheels, supercapacitors and fuel cells for energy storage, high-power switching devices, and smart power electronics assemblies with 20-year lifetimes.

(334) 844-5894

http://spi.auburn.edu

Imaging Technology Space Center (ITSC)

Florida Atlantic University

Research: HDMAX™ camera system for safety inspection and experiment monitoring, and portable ultrasound for crew wound care.

(561) 297-2343

http://www.fau.edu/divdept/comtech/ctchome.html

Medical Informatics and Technology Applications Consortium (MITAC)

Virginia Commonwealth University

Research: Operating room telecommunication system, telemedicine unit for use in remote environments, disaster areas and space; and information support for medical workers in the field.

(804) 827-1020

http://www.meditac.com

ProVision Technologies (PVT)

Stennis Space Center, Mississippi

Research: Hyperspectral imaging system to characterize and quantify blood perfusion and oxygen saturation in wounds, and hyperspectral sensors for detection of molds and toxins in food.

(228) 688-2509

http://www.pvtech.org

Spacecraft Technology Center (STC)

Texas A&M University

Research: Star tracker for attitude determination, HDMAX™ camera base station, wireless communication, and smart sensor/beacon technology for autonomous rendezvous and docking in space.

(979) 845-8768

http://stc.tamu.edu

Texas Center for Superconductivity and Advanced Materials (TcSAM)

University of Houston

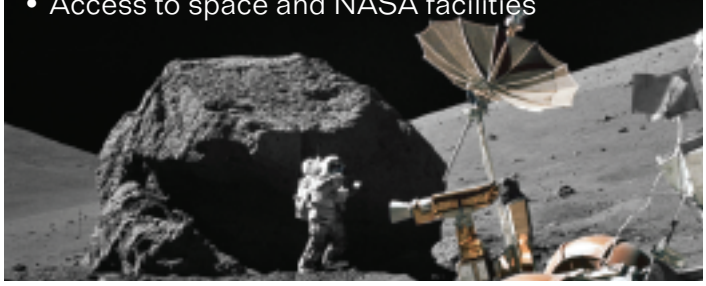
Research: Radiation hard solar cells, high-temperature superconducting power transmission for spacecraft, chemical sensors for environmental monitoring and medical diagnosis, and thermophotovoltaic converters.

(713) 743-8200

http://www.tcsam.uh.edu

What RPCs Offer Industry

- Ground- and space-based research
- Opportunities for innovation
- Potential new markets, businesses and products
- Opportunity to contribute to national goals
- Collaboration with other companies
- NASA and university expertise
- Access to space and NASA facilities



For more information, contact:

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http://spd.nasa.gov

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